

advantages of cross-pollination; adaptations for cross pollination, wind-pollination; and inconspicuous flowers. Inflorescences. Seeds; fruits: kinds of fruits; seed and fruit dispersa and its advantages; struggle for existence; survival of the fittest, variety, species; heredity and evolution.

6. Study of the following families:—Anonaceae, Cruciferae, Solanaceae, Malvaceae, Leguminosae, Myrtaceae, Rubiaceae, Compositae, Apocynaceae, Acanthaceae, Labiatae, Euphorbiaceae, Liliaceae, Amaryllidaceae, Palmae.

Some plant products: starch, oils, sugars, alkaloids, gums; resins, caoutchouc, fibres; the plants and the parts of the plant producing them.

Apex of the stem and root; meristem; cell structure; cell division; changes seen in the cell contents and the nature of the cell wall.

7. Structure, reproduction and the general features of the following:—

Chlamydomonas; a brief account of the valvocal origin of soma; division of labour; Ulothrix; Spirogyra; Fucus; Bacteria, Mucor, Cystopus; Yeast; Riccia; Moss; Adiantum, Lycopodium; Selaginella; Cycas (only external features). A typical flowering plant.

Practical work—Students are expected to examine and describe the external features of the plants. They should be able to prepare free-hand sections of the various parts of the plant and identify the preparations of the plant specimens coming under paras 5, 6 and 7. They should be able to refer plant specimens to the families they have studied. Special attention must be given to the class experimental demonstrations of the various physiological functions of the plant organs.

NOTE.—The course of study in Botany shall consist of three lectures per week of one hour each and a practical lesson of two hours per week.

BOOKS FOR STUDY.

1. Dutta, A. V.—A class Book of Botany.
2. Lowson and Sahni—A text-book of Botany: Revised Edition, 1951.
3. James, W. O.—Introduction to Biology.
4. Godwin, H.—Plant Biology.
5. Text-Book of Intermediate Botany by R. V. Narayanaswamy.
6. Intermediate Botany by Chaudhuri.

(Letter No. E. 2372, dated 3rd June 1952, from the Secretary to Government, Education Department, Bangalore.)

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Amendment No. 120.

Notification No. G4-1082-51-52, dated 3rd July 1952.

Revised Syllabus in Botany for the B.Sc. Degree Course.

1. The main points of structure, life history, development and taxonomic relationships of the following groups in general and the genera in particular:—

Myxomycetes; Bacteria; Cyanophyceae; Oscillatoria; Nostoc; Rivularia, Scytonema; Diatoms; Chlorophyceae; Chlamydomonas; Pantorina; Eudorina; Volvox; Protococcus, Hydrodictyon; Ulothrix; Oedogonium; Coleochaete; Cladophora; Vaucheria; Botrydium, Spirogyra; Zygnema and Desmids; Cosmarium and Closterium; Characeae: Chara. Phaeophyceae: Ectocarpus; Sargassum. Rhodophyceae: Batrachospermum; Polysiphonia. Fungi—Phycomycetes: Phytophthora; Mucor. Pilobolus; Saprolegnia, Cystopus. Ascomycetes: Saccharomycetes; Eurotium; Penicillium; Peziza, Zylaria. Basidiomycetes: Ustilago; Puccinia, Agaricus; Lycoperdon. Lichens, Bryophytes—Riccia, Marchantia, Anthoceros, Moss. Pteridophytes—Lycopodium, Selaginella, Equisetum, Ophioglossum, Osmunda, Adiantum, Marselia. Gymnosperms—Cycas, Pinus.

2. The morphology and the development of the reproductive organs of Angiosperms.

3. The external morphology of the Angiosperms, and the general principles of classification and the distinguishing characters of the following families, as used in the flora of British India:—

Magnoliaceae, Anonaceae, Cruciferae, Capparidaceae, Malvaceae, Sterculiaceae, Tiliaceae, Geraniaceae, Rutaceae, Rhamnace, Sapindaceae, Anacardiaceae,

278 Leguminosae, Rosaceae, Combrretaceae, Myrtaceae, Cucurbitaceae, Umbelliferae, Rubiaceae, Compositae, Sapotaceae, Ayocynaceae, Asclepiadaceae, Boraginaceae, Convolvulaceae, Solanaceae, Scrophulariaceae, Acanthaceae, Verbenaceae, Labiatae, Amarantaceae, Euphorbiaceae, Urticaceae, Orchidaceae, Scitamineae, Amaryllidaceae, Liliaceae, Palmae, Aroidae, Cyperaceae, Graminae.

4. Histology.—The structure of the cell and the nature of the cell contents. Cell wall and its modifications. Modes of cell division. Origin, nature and development of plant tissues. Primary and secondary tissues and their distribution in the plant body.

5. Ecology.—Origin of vegetation and plant succession. Ecological factors: Climatic, edaphic and biotic.

6. Physiology.—The chemical composition of the plant body. Materials of plant food and their sources. The nature of the soil and the importance of its constituents and microorganisms. Movements of water and gases. Assimilation of carbon and nitrogen. Transportation and translocation of the assimilated products. Parasitism and other modes of nutrition. Respiration. The influence of light, heat and gravity. Growth movements and irritability in plants. Sexual reproduction and its significance. The phenomenon of crossfertilization. Vegetative reproduction.

Variation, heredity and Mendelism. Theories of evolution and origin of species.

Practical work.—Candidates are expected to make preparations illustrating the form and structure of any plant of the groups mentioned in the syllabus and describe it with sketches sufficient for its identification; to make dissections, with the simple microscope, of the floral parts of Angiosperms; to make drawings; to construct floral diagrams and refer the plants to their families; to describe in technical language plants belonging to any of the groups mentioned in the syllabus.

At the practical examination each candidate must submit his laboratory note books.

Note.—The course of study in Botany shall consist of three lectures per week of one hour each, and a practical lesson of three hours duration.

Books for Study.

1. Raber, O.—Principles of Plant Physiology.
2. Eames and Macdaniels: An Introduction to Plant Anatomy.
3. Mclean: Practical Plant Ecology.
4. Leach, W.—Plant Ecology.
5. Mac Dougal—Plant Ecology.
6. A Text-book of Botany by Coulter, Barnes and Cowles.
7. Cryptogamic Botany, Vols. I and II by Smith.
8. Botany by Hill, Overholts and Popp.
9. Systematic Botany by R. J. Poole.
10. Systematic Botany by Swingle.
11. Text-book of Physiology by Shri Ranjan.

(Letter No. E. 2342, dated 31st May 1952, from the Secretary to Government, Education Department, Bangalore.)

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AMENDMENT No. 121.

Notification No. G4-1093-51-52, dated 3rd July 1952.

Revised Syllabus for the B.Sc. Degree in Agriculture. Alterations in Syllabus.

I YEAR B.Sc. (AGRICULTURE).

1. Agricultural Engineering.

The following words appearing under 'Lift Irrigation' be deleted, as they are dealt with in the II Year Syllabus: "Centrifugal pumps, low and high lift pumps, air lift pumps etc."

II. Veterinary Science.

The word 'Dieting' appearing in line 2 of para 2 under practical be deleted.

III. Zoology.

The following syllabus be substituted for the existing one. **Introduction.**—Meaning and relationship of Biology—Zoology and Botany. Characteristics of living organism—Animals and Plants: Factors of comparison

and contrast. Scope and different aspects of Zoology. Animal Cell-organization and function. Chief Properties of Protoplasm. General organization of animal body. Classification and nomenclature—General classification.

INVERTEBRATA (PART I).

Protozoa.—Differences between protozoa and metazoa; Study of amoeba euglena, paramoecium. Malarial parasite. A knowledge of soil protozoa, and pathogenic forms in relation to man and domestic animals.

Platyhelminthis.—Study of the structure and life history of sheep liver fluke; a knowledge of common cestode parasites of farm animals and man.

Nematoda.—An elementary account of the common nematodes affecting agricultural crops, farm animals and man.

Annelida.—General characteristics of the phylum; segmentation and coelom; study of earthworm and its importance to agriculture. Examples of the soil annelids of economic importance.

Arthropoda.—Classification and general characteristics. Differences and similarities between annelida and arthropoda. Study of external characteristics of prawn, millipedes and centipedes, spider and scorpion, ticks and mites.

Brief study of cockroach, butterfly and grasshopper. Agricultural importance of the above.

Mollusca.—Study of external characters of fresh water mussel, and agricultural importance of snail and slug. A knowledge of economic forms.

Vetebrata (Part II).

Chordata.—General characters of chordata; characters of vertebrate and classification. General characters of different classes—fishes, amphibia, reptiles, birds, and mammals. Comparative study of digestive, circulatory, respiratory excretory and reproductive systems.

Economic and agricultural importance.

Fishes: Economic forms and an elementary knowledge of pisciculture.

Amphibians. Economic importance.

Reptiles. Common poisonous snakes of South India, and their diagnostic characters.

Aves. Economic importance.

Mammals. Animal products with reference to mammals. Importance of farm animals.

Practical—Part I

Use of microscope and knowledge of its parts.

Protozoa.—Examination of fresh water samples for study of common protozoa—amoeba, euglena, paramoecium, vorticella, volvox. Examination of the slides of the above including malarial parasite and trypanosome.

Platyhelmenthis and *nematodes*. Study of external characters of sheep liver fluke, tapeworm and roundworm.

Annelida. Dissection of earthworm to show the position of internal organs, and digestive, circulatory and nervous systems.

Arthropoda. Study of external characters of prawn, crab, millipede, centipede, spider, scorpion, ticks and mites, cockroach, butterfly and grasshopper. Dissection of cockroach for digestive and respiratory, nervous and reproductive systems.

Mollusca. Study of the external characters of snail, and fresh water mussel. Dissection of fresh water mussel for digestive and nervous systems.

Part II.

Fishes: Dissection of digestive, circulatory systems.

Amphibians. Frog. Dissection of digestive, circulatory, reproductive brain and sympathetic nervous systems.

Reptiles. Lizard. Dissection of digestive circulatory systems.

Birds, pigeons.

Mammals, Guinea pig

} Dissection to show position of internal organs.

II YEAR B.Sc. AGRICULTURE.

299 Animal Husbandry.

(a) Under practicals the following sentence be *deleted*:
"Feeding and care of the cow during pregnancy and after calving, breeding bulls, bullocks and young stock. Milking of cows and buffaloes."

(b) *Add* the following at the end of the existing paragraph (d) under Breeds of Live-stock.
Poultry including incubation and brooding and marketing of eggs and birds.

III YEAR B.Sc. AGRICULTURE.

Animal Husbandry and Dairying.

Delete the following under item (c) of Care and Management of Live-stock:

"Poultry including incubation and brooding and marketing of eggs and birds."

(Letter No. E. 8241, dated 18th June 1952, from the Secretary to Government, Education Department, Bangalore).

By Order,

C. RANGACHAR,
Registrar.

DEPARTMENT OF PUBLIC INSTRUCTION.

OFFICE OF THE DIRECTOR OF PUBLIC INSTRUCTION IN MYSORE, BANGALORE.

(COMMERCIAL SECTION).

Notification dated 7—19th June 1952.

No. D. 29 Cl. 4454-38—51-52. It is hereby notified for general information that in partial modification of this Office Notification No. D. 20. Cl. 3939-13—46-47, dated 21st September 1948 under Rule III (1), the words "and Senior" be added after "Junior" in line 1 on page 2 and after the word "Junior" in line 4 of the same page.

The modified Rule will read as follows:—

III Admission of students to Commercial Institutions:—

(1) Students seeking admission to any course of study except Junior and Senior Typewriting in Commercial Institutions should produce satisfactory evidence to show that they have passed the Mysore S.S.L.C. or any equivalent examination. Students seeking admission to the Junior and Senior Typewriting should produce satisfactory evidence to show that they have completed the S.S.L.C. Course. (Vide letter No. E: 12048—Edn. 198-47-4, dated 12th March 1952 of the Secretary to Government, Education Department).

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(COMMERCIAL SECTION).

Notification dated 16th June 1952.

No. C 1. 1104-51—52-53. Applications for appointment as Examiners for the Mysore Government Commercial Examinations of 1953 (copies of which can be had on application) along with copies of testimonials, if any, are invited by the Secretary, Board for Commercial Education and Examinations, New Public Offices, Bangalore, so as to reach him on or before the 31st of August 1952.

2. All communications in this connection, if sent by post, should be properly stamped and pre-paid.

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Notification dated 30th June 1952.

No. F. Dis. Gl. 6815-76—52-53. It is hereby notified for general information that Sri A. K. Bharadwaj and Sri S. R. Ranganarasimha Setty, Municipal Councillors, Magadi, elected by the reconstituted Town Municipal Council, Magadi are appointed as Non-official Members to serve on the Managing Committee of the Municipal High School, Magadi, in place of the existing two Non-official Members representing the local Municipality, as per the Municipal Council's Resolution dated 8th May 1952. The Non-official President of the Municipal Council will continue to be a Non-official member of the Managing Committee of the above School representing the Municipality.

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